

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: MING-MING ZHOU *ET AL.*

SERIAL NO. : UNASSIGNED EXAMINER : UNKNOWN

FILED : HEREWITH ART UNIT : UNKNOWN

FOR : METHODS OF IDENTIFYING MODULATORS OF
BROMODOMAINS

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DATE OF DEPOSIT : February 16, 2001

STATEMENT IN SUPPORT OF THE FILING/SUBMISSION OF A
NUCLEOTIDE/AMINO ACID SEQUENCE LISTING IN
ACCORDANCE WITH 37 CFR §1.821 - 1.825

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

Dear Sir:

MICHAEL D. DAVIS, attorney of record, hereby states as follows:

I hereby state that the content of the paper and computer readable copies of the
Sequence Listing submitted in accordance with 37 CFR §1.821(c), (e) and (f) respectively,
are the same.

DATED: February 16, 2001


MICHAEL D. DAVIS

SEQUENCE LISTING

<110> Zhou, Ming-Ming
 Aggarwal, Aneel
 Verdin, Eric
 Ott, Melanie

<120> Methods of Identifying Modulators of Bromodomains

<130> 2459-1-003CIP

<140> Unassigned

<141> 2001-02-16

<150> 09/510,314

<151> 2000-02-22

<160> 59

<170> PatentIn version 3.0

<210> 1

<211> 3014

<212> DNA

<213> Homo sapiens

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1980

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2100

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<211> 832
<212> PRT
<213> Homo sapiens

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Pro Pro Ala Pro Pro Gln Gly Ser Pro Cys Ala Ala Ala Gly Gly
35 40 45

Ser Gly Ala Cys Gly Pro Ala Thr Ala Val Ala Ala Ala Gly Thr Ala
50 55 60

Glu Gly Pro Gly Gly Gly Gly Ser Ala Arg Ile Ala Val Lys Lys Ala
65 70 75 80

Gln Leu Arg Ser Ala Pro Arg Ala Lys Lys Leu Glu Lys Leu Gly Val
85 90 95

Tyr Ser Ala Cys Lys Ala Glu Glu Ser Cys Lys Cys Asn Gly Trp Lys

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Asn	Pro	Asn	Pro	Ser	Pro	Thr	Pro	Pro	Arg	Ala	Asp	Leu	Gln	Gln	Ile
	115						120					125			
Ile	Val	Ser	Leu	Thr	Glu	Ser	Cys	Arg	Ser	Cys	Ser	His	Ala	Leu	Ala
	130					135					140				
Ala	His	Val	Ser	His	Leu	Glu	Asn	Val	Ser	Glu	Glu	Glu	Met	Asn	Arg
	145					150					155				160
Leu	Leu	Gly	Ile	Val	Leu	Asp	Val	Glu	Tyr	Leu	Phe	Thr	Cys	Val	His
				165					170					175	
Lys	Glu	Glu	Asp	Ala	Asp	Thr	Lys	Gln	Val	Tyr	Phe	Tyr	Leu	Phe	Lys
			180					185					190		
Leu	Leu	Arg	Lys	Ser	Ile	Leu	Gln	Arg	Gly	Lys	Pro	Val	Val	Glu	Gly
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Ser	Leu	Glu	Lys	Lys	Pro	Pro	Phe	Glu	Lys	Pro	Ser	Ile	Glu	Gln	Gly
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Val	Asn	Asn	Phe	Val	Gln	Tyr	Lys	Phe	Ser	His	Leu	Pro	Ala	Lys	Glu
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Arg	Gln	Thr	Ile	Val	Glu	Leu	Ala	Lys	Met	Phe	Leu	Asn	Arg	Ile	Asn
				245					250					255	
Tyr	Trp	His	Leu	Glu	Ala	Pro	Ser	Gln	Arg	Arg	Leu	Arg	Ser	Pro	Asn
			260					265					270		
Asp	Asp	Ile	Ser	Gly	Tyr	Lys	Glu	Asn	Tyr	Thr	Arg	Trp	Leu	Cys	Tyr
		275					280					285			
Cys	Asn	Val	Pro	Gln	Phe	Cys	Asp	Ser	Leu	Pro	Arg	Tyr	Glu	Thr	Thr
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Gln	Val	Phe	Gly	Arg	Thr	Leu	Leu	Arg	Ser	Val	Phe	Thr	Val	Met	Arg
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Arg	Gln	Leu	Leu	Glu	Gln	Ala	Arg	Gln	Glu	Lys	Asp	Lys	Leu	Pro	Leu
				325					330					335	
Glu	Lys	Arg	Thr	Leu	Ile	Leu	Thr	His	Phe	Pro	Lys	Phe	Leu	Ser	Met
			340					345					350		
Leu	Glu	Glu	Glu	Val	Tyr	Ser	Gln	Asn	Ser	Pro	Ile	Trp	Asp	Gln	Asp
		355					360					365			
Phe	Leu	Ser	Ala	Ser	Ser	Arg	Thr	Ser	Gln	Leu	Gly	Ile	Gln	Thr	Val
	370					375					380				
Ile	Asn	Pro	Pro	Pro	Val	Ala	Gly	Thr	Ile	Ser	Tyr	Asn	Ser	Thr	Ser
	385					390					395				400
Ser	Ser	Leu	Glu	Gln	Pro	Asn	Ala	Gly	Ser	Ser	Ser	Pro	Ala	Cys	Lys
				405				410						415	
Ala	Ser	Ser	Gly	Leu	Glu	Ala	Asn	Pro	Gly	Glu	Lys	Arg	Lys	Met	Thr
			420					425					430		
Asp	Ser	His	Val	Leu	Glu	Glu	Ala	Lys	Lys	Pro	Arg	Val	Met	Gly	Asp
		435					440					445			
Ile	Pro	Met	Glu	Leu	Ile	Asn	Glu	Val	Met	Ser	Thr	Ile	Thr	Asp	Pro
	450					455					460				
Ala	Ala	Met	Leu	Gly	Pro	Glu	Thr	Asn	Phe	Leu	Ser	Ala	His	Ser	Ala

465	470	475	480
Arg Asp Glu Ala	Ala Arg Leu Glu Glu	Arg Arg Gly Val Ile	Glu Phe
	485	490	495
His Val Val Gly	Asn Ser Leu Asn Gln	Lys Pro Asn Lys	Lys Ile Leu
	500	505	510
Met Trp Leu Val Gly	Leu Gln Asn Val Phe Ser	His Gln Leu Pro	Arg
	515	520	525
Met Pro Lys Glu Tyr	Ile Thr Arg Leu Val Phe	Asp Pro Lys His	Lys
	530	535	540
Thr Leu Ala Leu Ile	Lys Asp Gly Arg Val Ile	Gly Gly Ile Cys	Phe
	545	550	555
Arg Met Phe Pro Ser	Gln Gly Phe Thr Glu	Ile Val Phe Cys	Ala Val
	565	570	575
Thr Ser Asn Glu Gln	Val Lys Gly Tyr Gly	Thr His Leu Met	Asn His
	580	585	590
Leu Lys Glu Tyr His	Ile Lys His Asp Ile Leu	Asn Phe Leu Thr	Tyr
	595	600	605
Ala Asp Glu Tyr Ala	Ile Gly Tyr Phe Lys	Lys Gln Gly Phe	Ser Lys
	610	615	620
Glu Ile Lys Ile Pro	Lys Thr Lys Tyr Val Gly	Tyr Ile Lys Asp	Tyr
	625	630	635
Glu Gly Ala Thr Leu	Met Gly Cys Glu Leu	Asn Pro Arg Ile	Pro Tyr
	645	650	655
Thr Glu Phe Ser Val	Ile Ile Lys Lys Gln	Lys Glu Ile Ile	Lys Lys
	660	665	670
Leu Ile Glu Arg Lys	Gln Ala Gln Ile Arg	Lys Val Tyr Pro	Gly Leu
	675	680	685
Ser Cys Phe Lys Asp	Gly Val Arg Gln Ile	Pro Ile Glu Ser	Ile Pro
	690	695	700
Gly Ile Arg Glu Thr	Gly Trp Lys Pro Ser	Gly Lys Glu Lys	Ser Lys
	705	710	715
Glu Pro Arg Asp Pro	Asp Gln Leu Tyr Ser	Thr Leu Lys Ser	Ile Leu
	725	730	735
Gln Gln Val Lys Ser	His Gln Ser Ala Trp	Pro Phe Met Glu	Pro Val
	740	745	750
Lys Arg Thr Glu Ala	Pro Gly Tyr Tyr Glu	Val Ile Arg Phe	Pro Met
	755	760	765
Asp Leu Lys Thr Met	Ser Glu Arg Leu Lys	Asn Arg Tyr Tyr	Val Ser
	770	775	780
Lys Lys Leu Phe Met	Ala Asp Leu Gln Arg	Val Phe Thr Asn	Cys Lys
	785	790	795
Glu Tyr Asn Ala Ala	Glu Ser Glu Tyr Tyr	Lys Cys Ala Asn	Ile Leu
	805	810	815
Glu Lys Phe Phe Phe	Ser Lys Ile Lys Glu	Ala Gly Leu Ile	Asp Lys
	820	825	830

<210> 3

<211> 12
 <212> PRT
 <213> artificial sequence

<220>
 <221> X
 <222> (2)..(2)
 <223> X is two to three amino acids. Each of these can be any amino acid
 id

<220>
 <221> X
 <222> (4)..(4)
 <223> The X is five to eight amino acids. Each of these can be any amino acid
 no acid

<220>
 <221> X
 <222> (5)..(5)
 <223> X is a single amino acid that is either Pro, Lys, or His.

<220>
 <221> X
 <222> (6)..(6)
 <223> This X is any single amino acid.

<220>
 <221> X
 <222> (8)..(8)
 <223> This X is a single amino acid that can be either Tyr, Phe, or His

<220>
 <221> X
 <222> (9)..(9)
 <223> X is 5 amino acids. Each of these can be any amino acid.

<220>
 <221> X
 <222> (11)..(11)
 <223> X is a single amino acid that can be Met, Ile, or Val.

<400> 3

Phe Xaa Pro Xaa Xaa Xaa Tyr Xaa Xaa Pro Xaa Asp
 1 5 10

<210> 4
 <211> 12
 <212> PRT
 <213> artificial sequence

<220>
 <221> Xaa
 <222> (6)..(6)
 <223> The X represents an acetyl-lysine

<400> 4

Ile Ser Tyr Gly Arg Xaa Lys Arg Arg Gln Arg Arg
1 5 10

<210> 5
<211> 14
<212> PRT
<213> artificial sequence

<220>
<221> X
<222> (8)..(8)
<223> The X represents an acetyl lysine.

<400> 5

Ala Arg Lys Ser Thr Gly Gly Xaa Ala Pro Arg Lys Gln Leu
1 5 10

<210> 6
<211> 14
<212> PRT
<213> artificial sequence

<220>
<221> X
<222> (8)..(8)
<223> The X represents an acetyl lysine.

<400> 6

Gln Ser Thr Ser Arg His Lys Xaa Leu Met Phe Lys Thr Glu
1 5 10

<210> 7
<211> 110
<212> PRT
<213> Homo sapiens, peptide

<400> 7

Ser Lys Glu Pro Arg Asp Pro Asp Gln Leu Tyr Ser Thr Leu Lys Ser
1 5 10 15

Ile Leu Gln Gln Val Lys Ser His Gln Ser Ala Trp Pro Phe Met Glu
20 25 30

Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Ser
35 40 45

Pro Met Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr
50 55 60

Val Ser Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn
65 70 75 80

Cys Lys Glu Tyr Asn Ala Pro Glu Ser Glu Tyr Tyr Lys Cys Ala Asn
85 90 95

Ile Leu Glu Lys Phe Phe Phe Ser Lys Ile Lys Glu Ala Gly
100 105 110

<210> 8
<211> 110
<212> PRT
<213> Homo sapiens

<400> 8

Gly Lys Glu Leu Lys Asp Pro Asp Gln Leu Tyr Thr Thr Leu Lys Asn
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 Leu Leu Ala Gln Ile Lys Ser His Pro Ser Ala Trp Pro Phe Met Glu
 20 25 30
 Pro Val Lys Lys Ser Glu Ala Pro Asp Tyr Tyr Glu Val Ile Arg Phe
 35 40 45
 Pro Ile Asp Leu Lys Thr Met Thr Glu Arg Leu Arg Ser Arg Tyr Tyr
 50 55 60
 Val Thr Arg Lys Leu Phe Val Ala Asp Leu Gln Arg Val Ile Ala Asn
 65 70 75 80
 Cys Arg Glu Tyr Asn Pro Pro Asp Ser Glu Tyr Cys Arg Cys Ala Ser
 85 90 95
 Ala Leu Glu Lys Phe Phe Tyr Phe Lys Leu Lys Glu Gly Gly
 100 105 110

<210> 9

<211> 109

<212> PRT

<213> Tetrahymena thermophila

<400> 9

Leu Lys Lys Ser Lys Glu Arg Ser Phe Asn Leu Gln Cys Ala Asn Val
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 20 25 30
 Val Asn Lys Asp Asp Val Pro Asp Tyr Tyr Asp Val Ile Thr Asp Pro
 35 40 45
 Ile Asp Ile Lys Ala Ile Glu Lys Lys Leu Gln Asn Asn Gln Tyr Val
 50 55 60
 Asp Lys Asp Gln Phe Ile Lys Asp Val Lys Arg Ile Phe Thr Asn Ala
 65 70 75 80
 Lys Ile Tyr Asn Gln Pro Asp Thr Ile Tyr Tyr Lys Ala Ala Lys Glu
 85 90 95
 Leu Glu Asp Phe Val Glu Pro Tyr Leu Thr Lys Leu Lys
 100 105

<210> 10

<211> 109

<212> PRT

<213> Saccharomyces cerevisiae

<400> 10

Ala Gln Arg Pro Lys Arg Gly Pro His Asp Ala Ala Ile Gln Asn Ile
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 Leu Thr Glu Leu Gln Asn His Ala Ala Ala Trp Pro Phe Leu Gln Pro
 20 25 30
 Val Asn Lys Glu Glu Val Pro Asp Tyr Tyr Asp Phe Ile Lys Glu Pro
 35 40 45
 Met Asp Leu Ser Thr Met Glu Ile Lys Leu Glu Ser Asn Lys Tyr Gln
 50 55 60

Lys Met Glu Asp Phe Ile Tyr Asp Ala Arg Leu Val Phe Asn Asn Cys
65 70 75 80

Arg Met Tyr Asn Gly Glu Asn Thr Ser Tyr Tyr Lys Tyr Ala Asn Arg
85 90 95

Leu Glu Lys Phe Phe Asn Asn Lys Val Lys Glu Ile Pro
100 105

<210> 11
<211> 112
<212> PRT
<213> Homo sapiens

<400> 11

Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr
1 5 10 15

Leu Glu Ala Leu Tyr Arg Gln Asp Pro Glu Ser Leu Pro Phe Arg Gln
20 25 30

Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
35 40 45

Lys Ser Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
50 55 60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Ile Trp Leu Met Phe
65 70 75 80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Tyr
85 90 95

Cys Ser Lys Leu Ser Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
100 105 110

<210> 12
<211> 112
<212> PRT
<213> Homo sapiens

<400> 12

Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr
1 5 10 15

Leu Glu Ala Leu Tyr Arg Gln Asp Pro Glu Ser Leu Pro Phe Arg Gln
20 25 30

Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
35 40 45

Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
50 55 60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Trp Leu Met Phe
65 70 75 80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe
85 90 95

Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
100 105 110

<210> 13
<211> 112
<212> PRT

<213> Mus musculus

<400> 13

Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr
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 Leu Glu Ala Leu Tyr Arg Gln Asp Pro Glu Ser Leu Pro Phe Arg Gln
 20 25 30
 Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
 35 40 45
 Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
 50 55 60
 Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Arg Leu Met Phe
 65 70 75 80
 Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe
 85 90 95
 Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
 100 105 110

<210> 14

<211> 111

<212> PRT

<213> Caenorhabditis elegans

<400> 14

Asp Thr Val Phe Ser Gln Glu Asp Leu Ile Lys Phe Leu Leu Pro Val
 1 5 10 15
 Trp Glu Lys Leu Asp Lys Ser Glu Asp Ala Ala Pro Phe Arg Val Pro
 20 25 30
 Val Asp Ala Lys Leu Leu Asn Ile Pro Asp Tyr His Glu Ile Ile Lys
 35 40 45
 Arg Pro Met Asp Leu Glu Thr Val His Lys Lys Leu Tyr Ala Gly Gln
 50 55 60
 Tyr Gln Asn Ala Gly Gln Phe Cys Asp Asp Ile Trp Leu Met Leu Asp
 65 70 75 80
 Asn Ala Trp Leu Tyr Asn Arg Lys Asn Ser Lys Val Tyr Lys Tyr Gly
 85 90 95
 Leu Lys Leu Ser Glu Met Phe Val Ser Glu Met Asp Pro Val Met
 100 105 110

<210> 15

<211> 110

<212> PRT

<213> Homo sapiens

<400> 15

Arg Arg Arg Thr Asp Pro Met Val Thr Leu Ser Ser Ile Leu Glu Ser
 1 5 10 15
 Ile Ile Asn Asp Met Arg Asp Leu Pro Asn Thr Tyr Pro Phe His Thr
 20 25 30
 Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg
 35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr
50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn
65 70 75 80

Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser Gln
85 90 95

Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu
100 105 110

<210> 16

<211> 110

<212> PRT

<213> Mesocricetus auratus

<400> 16

Arg Arg Arg Thr Asp Pro Met Val Thr Leu Ser Ser Ile Leu Glu Ser
1 5 10 15

Ile Ile Asn Asp Met Arg Asp Leu Pro Asn Thr Tyr Pro Phe His Thr
20 25 30

Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg
35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr
50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn
65 70 75 80

Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser Gln
85 90 95

Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu
100 105 110

<210> 17

<211> 111

<212> PRT

<213> Homo sapiens

<400> 17

Leu Leu Asp Asp Asp Asp Gln Val Ala Phe Ser Phe Ile Leu Asp Asn
1 5 10 15

Ile Val Thr Gln Lys Met Met Ala Val Pro Asp Ser Trp Pro Phe His
20 25 30

His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val
35 40 45

Asn Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys
50 55 60

Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala
65 70 75 80

Asn Ser Val Lys Tyr Asn Gly Pro Glu Ser Gln Tyr Thr Lys Thr Ala
85 90 95

Gln Glu Ile Val Asn Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp
100 105 110

<210> 18

<211> 111
 <212> PRT
 <213> Mesocricetus auratus

<400> 18

Leu Leu Asp Asp Asp Asp Gln Val Ala Phe Ser Phe Ile Leu Asp Asn
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 Ile Val Thr Gln Lys Met Met Ala Val Pro Asp Ser Trp Pro Phe His
 20 25 30
 His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val
 35 40 45
 Ser Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys
 50 55 60
 Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala
 65 70 75 80
 Asn Ser Val Lys Tyr Asn Gly Ser Glu Ser Gln Tyr Thr Lys Thr Ala
 85 90 95
 Gln Glu Ile Val Asn Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp
 100 105 110

<210> 19
 <211> 111
 <212> PRT
 <213> Homo sapiens

<400> 19

Lys Pro Gly Arg Val Thr Asn Gln Leu Gln Tyr Leu His Lys Val Val
 1 5 10 15
 Met Lys Ala Leu Trp Lys His Gln Phe Ala Trp Pro Phe Arg Gln Pro
 20 25 30
 Val Asp Ala Val Lys Leu Gly Leu Pro Asp Tyr His Lys Ile Ile Lys
 35 40 45
 Gln Pro Met Asp Met Gly Thr Ile Lys Arg Arg Leu Glu Asn Asn Tyr
 50 55 60
 Tyr Trp Ala Ala Ser Glu Cys Met Gln Asp Phe Asn Thr Met Phe Thr
 65 70 75 80
 Asn Cys Tyr Ile Tyr Asn Lys Pro Thr Asp Asp Ile Val Leu Met Ala
 85 90 95
 Gln Thr Leu Glu Lys Ile Phe Leu Gln Lys Val Ala Ser Met Pro
 100 105 110

<210> 20
 <211> 111
 <212> PRT
 <213> Homo sapiens

<400> 20

Lys Pro Gly Arg Lys Thr Asn Gln Leu Gln Tyr Met Gln Asn Val Val
 1 5 10 15
 Val Lys Thr Leu Trp Lys His Gln Phe Ala Trp Pro Phe Tyr Gln Pro
 20 25 30
 Val Asp Ala Ile Lys Leu Asn Leu Pro Asp Tyr His Lys Ile Ile Lys

35 40 45
 Asn Pro Met Asp Met Gly Thr Ile Lys Lys Arg Leu Glu Asn Asn Tyr
 50 55 60
 Tyr Trp Ser Ala Ser Glu Cys Met Gln Asp Phe Asn Thr Met Phe Thr
 65 70 75 80
 Asn Cys Tyr Ile Tyr Asn Lys Pro Thr Asp Asp Ile Val Leu Met Ala
 85 90 95
 Gln Ala Leu Glu Lys Ile Phe Leu Gln Lys Val Ala Gln Met Pro
 100 105 110

<210> 21
 <211> 111
 <212> PRT
 <213> *Drosophila melanogaster*

<400> 21

Arg Pro Gly Arg Asn Thr Asn Gln Leu Gln Tyr Leu Ile Lys Thr Val
 1 5 10 15
 Met Lys Val Ile Trp Lys His His Phe Ser Trp Pro Phe Gln Gln Pro
 20 25 30
 Val Asp Ala Lys Lys Leu Asn Leu Pro Asp Tyr His Lys Ile Ile Lys
 35 40 45
 Gln Pro Met Asp Met Gly Thr Ile Lys Lys Arg Leu Glu Asn Asn Tyr
 50 55 60
 Tyr Trp Ser Ala Lys Glu Thr Ile Gln Asp Phe Asn Thr Met Phe Asn
 65 70 75 80
 Asn Cys Tyr Val Tyr Asn Lys Pro Gly Glu Asp Val Val Val Met Ala
 85 90 95
 Gln Thr Leu Glu Lys Val Phe Leu Gln Lys Ile Glu Ser Met Pro
 100 105 110

<210> 22
 <211> 109
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 22

Asn Pro Ile Pro Lys His Gln Gln Lys His Ala Leu Leu Ala Ile Lys
 1 5 10 15
 Ala Val Lys Arg Leu Lys Asp Ala Arg Pro Phe Leu Gln Pro Val Asp
 20 25 30
 Pro Val Lys Leu Asp Ile Pro Phe Tyr Phe Asn Tyr Ile Lys Arg Pro
 35 40 45
 Met Asp Leu Ser Thr Ile Glu Arg Lys Leu Asn Val Gly Ala Tyr Glu
 50 55 60
 Val Pro Glu Gln Ile Thr Glu Asp Phe Asn Leu Met Val Asn Asn Ser
 65 70 75 80
 Ile Lys Phe Asn Gly Pro Asn Ala Gly Ile Ser Gln Met Ala Arg Asn
 85 90 95
 Ile Gln Ala Ser Phe Glu Lys His Met Leu Asn Met Pro
 100 105

<210> 23
 <211> 113
 <212> PRT
 <213> Homo sapiens

<400> 23

Lys Lys Gly Lys Leu Ser Glu Gln Leu Lys His Cys Asn Gly Ile Leu
 1 5 10 15
 Lys Glu Leu Leu Ser Lys Lys His Ala Ala Tyr Ala Trp Pro Phe Tyr
 20 25 30
 Lys Pro Val Asp Ala Ser Ala Leu Gly Leu His Asp Tyr His Asp Ile
 35 40 45
 Ile Lys His Pro Met Asp Leu Ser Thr Val Lys Arg Lys Met Glu Asn
 50 55 60
 Arg Asp Tyr Arg Asp Ala Gln Glu Phe Ala Ala Asp Val Arg Leu Met
 65 70 75 80
 Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Asp Val Val Ala
 85 90 95
 Met Ala Arg Lys Leu Gln Asp Val Phe Glu Phe Arg Tyr Ala Lys Met
 100 105 110

Pro

<210> 24
 <211> 113
 <212> PRT
 <213> Homo sapiens

<400> 24

Lys Lys Gly Lys Leu Ser Glu His Leu Arg Tyr Cys Asp Ser Ile Leu
 1 5 10 15
 Arg Glu Met Leu Ser Lys Lys His Ala Ala Tyr Ala Trp Pro Phe Tyr
 20 25 30
 Lys Pro Val Asp Ala Glu Ala Leu Glu Leu His Asp Tyr His Asp Ile
 35 40 45
 Ile Lys His Pro Met Asp Leu Ser Thr Val Lys Arg Lys Met Asp Gly
 50 55 60
 Arg Glu Tyr Pro Asp Ala Gln Gly Phe Ala Ala Asp Val Arg Leu Met
 65 70 75 80
 Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Glu Val Val Ala
 85 90 95
 Met Ala Arg Lys Leu Gln Asp Val Phe Glu Met Arg Phe Ala Lys Met
 100 105 110

Pro

<210> 25
 <211> 113
 <212> PRT
 <213> Drosophila melanogaster

<400> 25

Asn Lys Glu Lys Leu Ser Asp Ala Leu Lys Ser Cys Asn Glu Ile Leu
 1 5 10 15
 Lys Glu Leu Phe Ser Lys Lys His Ser Gly Tyr Ala Trp Pro Phe Tyr
 20 25 30
 Lys Pro Val Asp Ala Glu Met Leu Gly Leu His Asp Tyr His Asp Ile
 35 40 45
 Ile Lys Lys Pro Met Asp Leu Gly Thr Val Lys Arg Lys Met Asp Asn
 50 55 60
 Arg Glu Tyr Lys Ser Ala Pro Glu Phe Ala Ala Asp Val Arg Leu Ile
 65 70 75 80
 Phe Thr Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Asp Val Val Ala
 85 90 95
 Met Gly Arg Lys Leu Gln Asp Val Phe Glu Met Arg Tyr Ala Asn Ile
 100 105 110

Pro

<210> 26
 <211> 113
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 26

Lys Ser Lys Arg Leu Gln Gln Ala Met Lys Phe Cys Gln Ser Val Leu
 1 5 10 15
 Lys Glu Leu Met Ala Lys Lys His Ala Ser Tyr Asn Tyr Pro Phe Leu
 20 25 30
 Glu Pro Val Asp Pro Val Ser Met Asn Leu Pro Thr Tyr Phe Asp Tyr
 35 40 45
 Val Lys Glu Pro Met Asp Leu Gly Thr Ile Ala Lys Lys Leu Asn Asp
 50 55 60
 Trp Gln Tyr Gln Thr Met Glu Asp Phe Glu Arg Glu Val Arg Leu Val
 65 70 75 80
 Phe Lys Asn Cys Tyr Thr Phe Asn Pro Asp Gly Thr Ile Val Asn Met
 85 90 95
 Met Gly His Arg Leu Glu Glu Val Phe Asn Ser Lys Trp Ala Asp Arg
 100 105 110

Pro

<210> 27
 <211> 108
 <212> PRT
 <213> *Homo sapiens*

<400> 27

Met Glu Met Gln Leu Thr Pro Phe Leu Ile Leu Leu Arg Lys Thr Leu
 1 5 10 15
 Glu Gln Leu Gln Glu Lys Asp Thr Gly Asn Ile Phe Ser Glu Pro Val
 20 25 30

Pro Leu Ser Glu Val Pro Asp Tyr Leu Asp His Ile Lys Lys Pro Met
 35 40 45
 Asp Phe Phe Thr Met Lys Gln Asn Leu Glu Ala Tyr Arg Tyr Leu Asn
 50 55 60
 Phe Asp Asp Phe Glu Glu Asp Phe Asn Leu Ile Val Ser Asn Cys Leu
 65 70 75 80
 Lys Tyr Asn Ala Lys Asp Thr Ile Phe Tyr Arg Ala Ala Val Arg Leu
 85 90 95
 Arg Glu Gln Gly Gly Ala Val Val Arg Gln Ala Arg
 100 105

<210> 28
 <211> 113
 <212> PRT
 <213> Homo sapiens

<400> 28

Ser Glu Asp Gln Glu Ala Ile Gln Ala Gln Lys Ile Trp Lys Lys Ala
 1 5 10 15
 Ile Met Leu Val Trp Arg Ala Ala Ala Asn His Arg Tyr Ala Asn Val
 20 25 30
 Phe Leu Gln Pro Val Thr Asp Asp Ile Ala Pro Gly Tyr His Ser Ile
 35 40 45
 Val Gln Arg Pro Met Asp Leu Ser Thr Ile Lys Lys Asn Ile Glu Asn
 50 55 60
 Gly Leu Ile Arg Ser Thr Ala Glu Phe Gln Arg Asp Ile Met Leu Met
 65 70 75 80
 Phe Gln Asn Ala Val Met Tyr Asn Ser Ser Asp His Asp Val Tyr His
 85 90 95
 Met Ala Val Glu Met Gln Arg Asp Val Leu Glu Gln Ile Gln Gln Phe
 100 105 110
 Leu

<210> 29
 <211> 106
 <212> PRT
 <213> Gallus gallus

<400> 29

Asn Leu Pro Thr Val Asp Pro Ile Ala Val Cys His Glu Leu Tyr Asn
 1 5 10 15
 Thr Ile Arg Asp Tyr Lys Asp Glu Gln Gly Arg Leu Leu Cys Glu Leu
 20 25 30
 Phe Ile Arg Ala Pro Lys Arg Arg Asn Gln Pro Asp Tyr Tyr Glu Val
 35 40 45
 Val Ser Gln Pro Ile Asp Leu Met Lys Ile Gln Gln Lys Leu Lys Met
 50 55 60
 Glu Glu Tyr Asp Asp Val Asn Val Leu Thr Ala Asp Phe Gln Leu Leu
 65 70 75 80
 Phe Asn Asn Ala Lys Ala Tyr Tyr Lys Pro Asp Ser Pro Glu Tyr Lys

85 90 95

Ala Ala Cys Lys Leu Trp Glu Leu Tyr Leu
100 105

<210> 30
<211> 112
<212> PRT
<213> Gallus gallus

<400> 30

Ser Ser Pro Gly Tyr Leu Lys Glu Ile Leu Glu Gln Leu Leu Glu Ala
1 5 10 15

Val Ala Val Ala Thr Asn Pro Ser Gly Arg Leu Ile Ser Glu Leu Phe
20 25 30

Gln Lys Leu Pro Ser Lys Val Gln Tyr Pro Asp Tyr Tyr Ala Ile Ile
35 40 45

Lys Glu Pro Ile Asp Leu Lys Thr Ile Ala Gln Arg Ile Gln Asn Gly
50 55 60

Thr Tyr Lys Ser Ile His Ala Met Ala Lys Asp Ile Asp Leu Leu Ala
65 70 75 80

Lys Asn Ala Lys Thr Tyr Asn Glu Pro Gly Ser Gln Val Phe Lys Asp
85 90 95

Ala Asn Ala Ile Lys Lys Ile Phe Asn Met Lys Lys Ala Glu Ile Glu
100 105 110

<210> 31
<211> 112
<212> PRT
<213> Gallus gallus

<400> 31

Thr Ser Phe Met Asp Thr Ser Asn Pro Leu Tyr Gln Leu Tyr Asp Thr
1 5 10 15

Val Arg Ser Cys Arg Asn Asn Gln Gly Gln Leu Ile Ser Glu Pro Phe
20 25 30

Phe Gln Leu Pro Ser Lys Lys Lys Tyr Pro Asp Tyr Tyr Gln Gln Ile
35 40 45

Lys Thr Pro Ile Ser Leu Gln Gln Ile Arg Ala Lys Leu Lys Asn His
50 55 60

Glu Tyr Glu Thr Leu Asp Gln Leu Glu Ala Asp Leu Asn Leu Met Phe
65 70 75 80

Glu Asn Ala Lys Arg Tyr Asn Val Pro Asn Ser Ala Ile Tyr Lys Arg
85 90 95

Val Leu Lys Met Gln Gln Val Met Gln Ala Lys Lys Lys Glu Leu Ala
100 105 110

<210> 32
<211> 113
<212> PRT
<213> Gallus gallus

<400> 32

Ser Lys Lys Asn Met Arg Lys Gln Arg Met Lys Ile Leu Tyr Asn Ala

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1           5           10           15
Val Leu Glu Ala Arg Glu Ser Gly Thr Gln Arg Arg Leu Cys Asp Leu
      20           25           30
Phe Met Val Lys Pro Ser Lys Lys Asp Tyr Pro Asp Tyr Tyr Lys Ile
      35           40           45
Ile Leu Glu Pro Met Asp Leu Lys Met Ile Glu His Asn Ile Arg Asn
      50           55           60
Asp Lys Tyr Val Gly Glu Glu Ala Met Ile Asp Asp Met Lys Leu Met
      65           70           75           80
Phe Arg Asn Ala Arg His Tyr Asn Glu Glu Gly Ser Gln Val Tyr Asn
      85           90           95
Asp Ala His Met Leu Glu Lys Ile Leu Lys Glu Lys Arg Lys Glu Leu
      100          105          110

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Gly

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<210> 33
<211> 115
<212> PRT
<213> Gallus gallus

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<400> 33

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Lys Lys Ser Lys Tyr Met Thr Pro Met Gln Gln Lys Leu Asn Glu Val
1           5           10           15
Tyr Glu Ala Val Lys Asn Tyr Thr Asp Lys Arg Gly Arg Arg Leu Ser
      20           25           30
Ala Ile Phe Leu Arg Leu Pro Ser Arg Ser Glu Leu Pro Asp Tyr Tyr
      35           40           45
Ile Thr Ile Lys Lys Pro Val Asp Met Glu Lys Ile Arg Ser His Met
      50           55           60
Met Ala Asn Lys Tyr Gln Asp Ile Asp Ser Met Val Glu Asp Phe Val
      65           70           75           80
Met Met Phe Asn Asn Ala Cys Thr Tyr Asn Glu Pro Glu Ser Leu Ile
      85           90           95
Tyr Lys Asp Ala Leu Val Leu His Lys Val Leu Leu Glu Thr Arg Arg
      100          105          110

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Glu Ile Glu
      115

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<210> 34
<211> 112
<212> PRT
<213> Description of unknown organism, see Jeanmougin et al., Trends
in Biochem. Sci. 22:151-153 (1997)

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<400> 34

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His Asn Ala Pro Phe Asp Lys Thr Lys Phe Asp Glu Val Leu Glu Ala
1           5           10           15
Leu Val Gly Leu Lys Asp Asn Glu Gly Asn Pro Phe Asp Asp Ile Phe
      20           25           30
Glu Glu Leu Pro Ser Lys Arg Tyr Phe Pro Asp Tyr Tyr Gln Ile Ile

```

```

          35              40              45
Gln Lys Pro Ile Cys Tyr Lys Met Met Arg Asn Lys Ala Lys Thr Gly
  50              55              60
Lys Tyr Leu Ser Met Gly Asp Phe Tyr Asp Asp Ile Arg Leu Met Val
  65              70              75              80
Ser Asn Ala Gln Thr Tyr Asn Met Pro Gly Ser Leu Val Tyr Glu Cys
          85              90              95
Ser Val Leu Ile Ala Asn Thr Ala Asn Ser Leu Glu Ser Lys Asp Gly
          100              105              110

```

<210> 35
 <211> 113
 <212> PRT
 <213> Description of unknown organism, see Jeanmougin et al., Trends
 in Biochem. Sci. 22:151-153 (1997)

```

<400> 35
Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp
  1              5              10              15
Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile
          20              25              30
Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile
          35              40              45
Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys
          50              55              60
Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met
  65              70              75              80
Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu
          85              90              95
Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe
          100              105              110

```

Ser

<210> 36
 <211> 113
 <212> PRT
 <213> Homo sapiens

```

<400> 36
Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp
  1              5              10              15
Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile
          20              25              30
Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile
          35              40              45
Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys
          50              55              60
Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met
  65              70              75              80
Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu

```

85 90 95
 Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe
 100 105 110

Ser

<210> 37
 <211> 114
 <212> PRT
 <213> Homo sapiens

<400> 37

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp
 1 5 10 15
 Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu
 20 25 30
 Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu
 35 40 45
 Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg
 50 55 60
 Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu
 65 70 75 80
 Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Leu Ile Tyr
 85 90 95
 Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys
 100 105 110

Ile Glu

<210> 38
 <211> 113
 <212> PRT
 <213> Gallus gallus

<400> 38

Ser Pro Asn Pro Pro Lys Leu Thr Lys Gln Met Asn Ala Ile Ile Asp
 1 5 10 15
 Thr Val Ile Asn Tyr Lys Asp Ser Ser Gly Arg Gln Leu Ser Glu Val
 20 25 30
 Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu Leu
 35 40 45
 Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg Asn
 50 55 60
 His Lys Tyr Arg Ser Leu Gly Asp Leu Glu Lys Asp Val Met Leu Leu
 65 70 75 80
 Cys His Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Gln Ile Tyr Glu
 85 90 95
 Asp Ser Ile Val Leu Gln Ser Val Phe Lys Ser Ala Arg Gln Lys Ile
 100 105 110

Ala

<210> 39
 <211> 114
 <212> PRT
 <213> Gallus gallus

<400> 39

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp
 1 5 10 15
 Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu
 20 25 30
 Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu
 35 40 45
 Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg
 50 55 60
 Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu
 65 70 75 80
 Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Val Ser Leu Ile Tyr
 85 90 95
 Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys
 100 105 110
 Ile Glu

<210> 40
 <211> 105
 <212> PRT
 <213> Homo sapiens

<400> 40

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu
 1 5 10 15
 Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr
 20 25 30
 Asp Ser Thr Phe Ser Leu Asp Gln Pro Gly Gly Thr Leu Asp Leu Thr
 35 40 45
 Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser
 50 55 60
 Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn
 65 70 75 80
 Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln
 85 90 95
 Arg Phe Phe Glu Thr Arg Met Asn Glu
 100 105

<210> 41
 <211> 105
 <212> PRT
 <213> Mus musculus

<400> 41

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu
 1 5 10 15

Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr
 20 25 30
 Asp Ser Thr Phe Ser Met Glu Gln Pro Gly Gly Thr Leu Asp Leu Thr
 35 40 45
 Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser
 50 55 60
 Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn
 65 70 75 80
 Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln
 85 90 95
 Arg Phe Phe Glu Thr Arg Met Asn Asp
 100 105

<210> 42
 <211> 108
 <212> PRT
 <213> Mus sp.

<400> 42

Thr Lys Leu Thr Pro Ile Asp Lys Arg Lys Cys Glu Arg Leu Leu Leu
 1 5 10 15
 Phe Leu Tyr Cys His Glu Met Ser Leu Ala Phe Gln Asp Pro Val Pro
 20 25 30
 Leu Thr Val Pro Asp Tyr Tyr Lys Ile Ile Lys Asn Pro Met Asp Leu
 35 40 45
 Ser Thr Ile Lys Lys Arg Leu Gln Glu Asp Tyr Cys Met Tyr Thr Lys
 50 55 60
 Pro Glu Asp Phe Val Ala Asp Phe Arg Leu Ile Phe Gln Asn Cys Ala
 65 70 75 80
 Glu Phe Asn Glu Pro Asp Ser Glu Val Ala Asn Ala Gly Ile Lys Leu
 85 90 95
 Glu Ser Tyr Phe Glu Glu Leu Leu Lys Asn Leu Tyr
 100 105

<210> 43
 <211> 14
 <212> PRT
 <213> artificial sequence

<220>
 <221> X
 <222> (1)..(2)
 <223> X can be any single amino acid

<220>
 <221> X
 <222> (4)..(4)
 <223> X is two to three amino acids. Each of these can be any amino
 aci
 d

<220>
 <221> X
 <222> (6)..(6)

<223> X is five to eight amino acids. Each of these can be any amino
ac
id

<220>
<221> X
<222> (7)..(7)
<223> X is a single amino acid that can be Pro, Lys, or His.

<220>
<221> X
<222> (8)..(8)
<223> X is a single amino acid that can be any amino acid.

<220>
<221> X
<222> (10)..(10)
<223> X is a single amino acid that can be a Tyr, Phe, or His.

<220>
<221> X
<222> (11)..(11)
<223> X is five amino acids. Each of these can be any amino acid.

<220>
<221> X
<222> (13)..(13)
<223> X is a single amino acid that can be Met, Ile, or Val.

<400> 43

Xaa Xaa Phe Xaa Pro Xaa Xaa Xaa Tyr Xaa Xaa Pro Xaa Asp
1 5 10

<210> 44
<211> 20
<212> PRT
<213> artificial sequence

<400> 44

Trp Pro Phe Met Glu Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr
1 5 10 15

Glu Val Ile Arg
20

<210> 45
<211> 101
<212> PRT
<213> Human immunodeficiency virus type 1

<400> 45

Met Glu Pro Val Asp Pro Arg Leu Glu Pro Trp Lys His Pro Gly Ser
1 5 10 15

Gln Pro Lys Thr Ala Ser Asn Asn Cys Tyr Cys Lys Arg Cys Cys Leu
20 25 30

His Cys Gln Val Cys Phe Thr Lys Lys Gly Leu Gly Ile Ser Tyr Gly
35 40 45

Arg Lys Lys Arg Arg Gln Arg Arg Arg Ala Pro Gln Asp Ser Lys Thr
50 55 60

His Gln Val Ser Leu Ser Lys Gln Pro Ala Ser Gln Pro Arg Gly Asp
65 70 75 80

Pro Thr Gly Pro Lys Glu Ser Lys Lys Lys Val Glu Arg Glu Thr Glu
85 90 95

Thr Asp Pro Glu Asp
100

<210> 46
<211> 7
<212> PRT
<213> artificial sequence

<220>
<221> X
<222> (5)..(5)
<223> X is one to three amino acids. Each amino acid can be any amino acid

<400> 46

Tyr Gly Arg Lys Xaa Arg Gln
1 5

<210> 47
<211> 10
<212> PRT
<213> artificial sequence

<400> 47

Ser Tyr Gly Arg Lys Lys Arg Arg Gln Arg
1 5 10

<210> 48
<211> 10
<212> PRT
<213> artificial

<220>
<221> X
<222> (2)..(2)
<223> X is two to four amino acids. Each of these can be any amino aci
d

<220>
<221> X
<222> (4)..(4)
<223> X is two to four amino acids. Each of these can be any amino aci
d

<220>
<221> X
<222> (6)..(6)
<223> X is two to four amino acids. Each of these can be any amino aci
d

<220>

<221> X
 <222> (8)..(8)
 <223> X is one to three amino acids. Each of these can be any amino
 ac
 id

<220>
 <221> X
 <222> (10)..(10)
 <223> X is a single amino acid that is either Ile, Leu, Met, or Val.

<400> 48

Phe Xaa Val Xaa Glu Xaa Tyr Xaa Val Xaa
 1 5 10

<210> 49
 <211> 62
 <212> PRT
 <213> artificial sequence

<400> 49

Phe Met Glu Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val
 1 5 10 15

Ile Arg Phe Pro Met Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn
 20 25 30

Arg Tyr Tyr Val Ser Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val
 35 40 45

Phe Thr Asn Cys Lys Glu Tyr Asn Ala Ala Glu Ser Glu Tyr
 50 55 60

<210> 50
 <211> 11
 <212> PRT
 <213> artificial sequence

<220>
 <221> X
 <222> (5)..(5)
 <223> X is an acetylated lysine (AcK).

<400> 50

Ser Tyr Gly Arg Xaa Lys Arg Arg Gln Arg Cys
 1 5 10

<210> 51
 <211> 11
 <212> PRT
 <213> artificial sequence

<220>
 <221> X
 <222> (5)..(5)
 <223> X is an acetylated lysine (AcK)

<400> 51

Ser Ala Gly Arg Xaa Lys Arg Arg Gln Arg Cys
 1 5 10

<210> 52
 <211> 11
 <212> PRT
 <213> artificial sequence

 <220>
 <221> X
 <222> (5)..(5)
 <223> X is an acetylated lysine (AcK)

<400> 52

Ser Tyr Gly Ala Xaa Lys Arg Arg Gln Arg Cys
 1 5 10

<210> 53
 <211> 11
 <212> PRT
 <213> artificial sequence

 <220>
 <221> X
 <222> (5)..(5)
 <223> X is an acetylated lysine (AcK).

<400> 53

Ser Tyr Gly Arg Xaa Ala Arg Arg Gln Arg Cys
 1 5 10

<210> 54
 <211> 11
 <212> PRT
 <213> artificial sequence

 <220>
 <221> X
 <222> (5)..(5)
 <223> X is an acetylated lysine (AcK).

<400> 54

Ser Tyr Gly Arg Xaa Lys Ala Arg Gln Arg Cys
 1 5 10

<210> 55
 <211> 11
 <212> PRT
 <213> artificial sequence

 <220>
 <221> X
 <222> (5)..(5)
 <223> X is an acetylated lysine (AcK)

<400> 55

Ser Tyr Gly Arg Xaa Lys Arg Ala Gln Arg Cys
 1 5 10

<210> 56
 <211> 11
 <212> PRT
 <213> artificial sequence

<220>
 <221> X
 <222> (5)..(5)
 <223> X is an acetylated lysine (AcK)

<400> 56

Ser Tyr Gly Arg Xaa Lys Arg Arg Ala Arg Cys
 1 5 10

<210> 57
 <211> 11
 <212> PRT
 <213> artificail sequence

<220>
 <221> X
 <222> (6)..(6)
 <223> X is an acetylated lysine (AcK)

<400> 57

Ser Tyr Gly Arg Lys Xaa Arg Arg Gln Arg Cys
 1 5 10

<210> 58
 <211> 11
 <212> PRT
 <213> artificial sequence

<220>
 <221> X
 <222> (7)..(7)
 <223> X is an acetylated lysine (AcK)

<400> 58

Thr Asn Cys Tyr Cys Lys Xaa Cys Cys Phe His
 1 5 10

<210> 59
 <211> 20
 <212> PRT
 <213> artificial sequence

<220>
 <221> X
 <222> (16)..(16)
 <223> X is an acetylated lysine (AcK)

<400> 59

Ser Gly Arg Gly Lys Gly Gly Lys Gly Leu Gly Lys Gly Gly Ala Xaa
 1 5 10 15

Arg His Arg Lys
 20